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ALLERGIC RHINITIS: YESTERDAY AND TODAY (LITERATURE REVIEW)

Dzhuraev Djamolbek Abdukakharovich, Nazarov Obid Abdusamatovich, Soatov Ilyosjon Olim ugli
Tashkent State Medical University

Abstract: Allergic rhinitis (AR) is one of the most common chronic allergic diseases, affecting a significant proportion of the global population. Over the past decades, approaches to understanding, diagnosing, and treating AR have undergone significant changes. Historically, key strategies included symptom control using antihistamines, corticosteroids, and specific immunotherapy; later, targeted pharmacological treatment and optimization of regimens emerged. Today, thanks to in-depth studies of pathophysiology, immunological mechanisms, the role of environmental factors, and comorbid conditions, treatment has become more comprehensive and personalized. Recent reviews emphasize the importance of reliable diagnosis, individualized therapy selection, as well as the potential role of immunomodulation and allergen-specific immunotherapy. Nonetheless, challenges remain: many patients still have insufficient symptom control, and the disease burden is increasing, including the risk of developing comorbidities such as bronchial asthma (BA). This article summarizes the key stages in the historical evolution of the understanding and treatment of AR, current concepts of pathogenesis, diagnosis, and therapy, and identifies current challenges and directions for further research.
Keywords: allergic rhinitis, history, modern treatment methods, immunotherapy, intranasal corticosteroids.

Introduction

Allergic rhinitis is a disease characterized by inflammation of the nasal mucosa, caused by IgE-mediated hypersensitivity to airborne allergens (pollen, dust mites, animal dander, etc.). Two main phenotypes are described in the literature: seasonal (seasonal allergy) and perennial (persistent) rhinitis, reflecting the diversity of allergens and exposure conditions. Since the early descriptions, when the term “allergy” was introduced in the early 20th century, medicine has gradually developed an understanding of the pathogenesis of hypersensitivity.

By the mid-20th century, with the development of immunology, drugs aimed at suppressing the allergic response—antihistamines, corticosteroids, and mast cell stabilizers—began to be used, allowing symptom control. At the same time, attention to patients’ quality of life, the widespread prevalence of AR, and its social and economic burden increased.

With rising prevalence and accumulation of clinical observations, it became clear that simple symptomatic control was insufficient—it was necessary to consider comorbid conditions (sinusitis, asthma, conjunctivitis), environmental factors, allergen load, genetic predisposition, and immune status.

The aim of this article is to trace how the understanding of AR has evolved from “yesterday” (early research, first approaches to treatment and diagnosis) to the successes achieved “today”: how approaches have changed, the basis of modern therapy, remaining challenges, and future prospects.

“Yesterday”: Historical Path of Diagnosis and Treatment of AR. Early Concepts and Approaches

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- The term "allergy" was first proposed in the early 20th century to describe the reactivity of the immune system.
- In the first decades, AR treatment relied on allergen avoidance, environmental control, and basic hygiene measures, which limited but did not eliminate the disease.
- The emergence of antihistamines in the 1930s marked the first real breakthrough, making it possible to relieve symptoms such as sneezing, itching, rhinorrhea, and conjunctival manifestations.
- In the 1950s, nasal corticosteroids appeared as a local, more targeted treatment of mucosal inflammation, significantly expanding therapeutic possibilities.
- Other methods included mast cell stabilizers, decongestants, and anti-leukotriene drugs; however, their effectiveness was often limited, side effects significant, and long-term use problematic.

Immunotherapy: Attempt to Modify the Natural Course

One important step was the introduction of allergen-specific immunotherapy (ASIT), the first method capable not only of alleviating symptoms but potentially modifying the pathogenesis and prognosis of the disease. Classic schemes involved subcutaneous injections of allergens with gradually increasing doses, which helped develop immune tolerance.

Nevertheless, early ASIT had limitations: long duration of treatment, risk of side effects, need for regular visits, and inconvenience for patients. These factors constrained widespread use.

"Today": Modern Approaches, Knowledge, and Practice

Modern understanding of AR emphasizes that it is not merely a reaction to allergens but a complex disease involving the epithelial barrier, immune cells (including Th2 response, IgE, mast cells), inflammatory mediators, and a significant role of environmental factors and comorbid conditions.

Diagnosis of AR now involves a comprehensive approach: medical history (including seasonality, allergen exposure, environmental factors), physical examination, and confirmation of sensitization through skin tests or serological tests for specific IgE, which allows differentiation from non-allergic rhinitis.

The importance of differential diagnosis is also emphasized: non-allergic rhinitis, mixed forms, drug-induced rhinitis, and vasomotor rhinitis – their symptoms can overlap.

Modern therapy: personalization, combination, immunomodulation

- The basis of therapy consists of nasal corticosteroids (still the "gold standard" for most patients with moderate to severe allergic rhinitis) and second-generation antihistamines – they are effective, safe, and have fewer side effects than first-generation drugs.
- For mild, episodic allergic rhinitis, oral antihistamines may be used; for persistent cases, intranasal medications (corticosteroids ± antihistamines) are recommended.
- Delivery methods have been improved (sprays, better-tolerated formulations), along with combined medications and dosing regimens to enhance patient adherence.
- Immunotherapy (AIT) remains an important component – as an addition or alternative to pharmacotherapy. It can modify disease progression, reduce sensitization, improve quality of life, and in children, potentially prevent the development of comorbid asthma.
- Modern medicine increasingly focuses on immunomodulation and "disease-modifying" strategies, rather than solely symptom control.

Comprehensive and personalized approach

In current clinical guidelines for managing allergic rhinitis, the following are important: detailed history taking, identification of allergens, correction of environmental factors, combination therapy, and consideration of severity, frequency of exacerbations, and comorbid

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conditions.
There is also growing recognition that allergic rhinitis often coexists with other allergic and respiratory conditions – such as asthma, sinusitis, and conjunctivitis – which requires a multidisciplinary approach

Conclusion

The study and treatment of allergic rhinitis (AR) have undergone significant evolution: from basic concepts of allergy and symptomatic treatment to a deep understanding of underlying mechanisms, comprehensive and individualized approaches, immunotherapy, and disease course modification. Today, AR is considered not merely an unpleasant symptom complex but as an important chronic condition with the potential for long-term control and influence on prognosis.
Nevertheless, despite considerable progress, important challenges remain: improving therapy effectiveness and patient adherence, expanding diagnostic capabilities, considering environmental and comorbid factors, and developing new strategies for treatment and prevention.
For further advancement, the active implementation of personalized medicine, comprehensive treatment programs, early diagnosis, and continued research into the immunological and environmental aspects of the disease are essential.

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